

REMARKS

Initially, in the Office Action dated May 4, 2005, the Examiner rejects claims 1-7 under 35 U.S.C. §112, second paragraph. Claims 1 and 2 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,397,260 (Wils et al.) in view of U.S. Patent No. 5,539,883 (Allon et al.). Claims 4 - 6 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Wils et al. in view of Allon et al. Claims 3 and 7 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Allon et al. in view of Wils et al.

By the present response, Applicant has amended claims 1 and 4-7 to further clarify the invention. Claims 1-7 remain pending in the present application.

35 U.S.C. §112 Rejections

Claims 1-7 have been rejected under 35 U.S.C. §112, second paragraph. Applicant has amended the claims to further clarify the invention and respectfully request that these rejections be withdrawn.

35 U.S.C. §103 Rejections

Claims 1 and 2 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Wils et al. in view of Allon et al. Applicant respectfully traverses these rejections.

Wils et al. discloses a network being operated such that message forwarding traffic is shared among routers in a load-sharing set. The routers are respectively associated with different non-overlapping subspaces of a service address space from which source addresses of source nodes on the network are drawn, and each

router has an identifier uniquely identifying the router in the load-sharing set.

Address request messages identifying a predetermined forwarding route are broadcast on the network by source nodes, each request messages containing a source address of the broadcasting node. In response to each address request message, each router determines whether the source address is within the address subspace associated with the router, and if so returns the routers identifier to the source node.

Allon et al. discloses operating a computer in a network of computers using an improved load-balancing technique. Logical links are generated between the computer and other computers in the network so that a tree structure is formed, the computer being logically linked to one computer higher up the tree and a number of computers lower down the tree. Stored information is maintained in the computer regarding the current load on the computer and the load on at least some of the other computers in the network by causing the computer periodically to distribute the information to the computers to which it is logically linked, and to receive from the computer similar such information and to update its own information in accordance therewith, so that the information can be used to determine a computer in the network that can accept extra load.

Regarding claim 1, Applicant submits that none of the cited references, taken alone or in any proper combination, disclose, suggest or render obvious the limitations in the combination of each of these claims of, inter alia, storing source addresses of the terminals or relaying data in the first network, in a terminal address

table provided in each apparatus relaying data between the terminals and the first network, the each apparatus relaying data having the source addresses stored in its associated table, or notifying the selected other apparatus of the source address of the terminal deleted from the terminal address table of the one apparatus, or storing the deleted source address in the terminal address table of the notified other apparatus. The Examiner asserts that Wils et al. discloses storing source addresses of the terminals for relaying data in the first network in a terminal address table at Fig. 4, the abstract, col. 4, lines 1-17, col. 6, line 64 – col. 7, line 7. However, Wils et al., Figs. 1 and 2 of the prior art and Fig. 3 of their invention disclose that source hosts H1-H4 hold addresses of default routers and specify a relaying router among them. In Fig. 1 and 2, hosts H1 and H2 have IP address IPA of a router R1 as default router, while hosts H3 and H4 have IP address IPB as default router. Hosts H3 and H4 designate the default router to transmit packets. Each router relays a packet having the self address as a destination address (col. 3, lines 43-67, col. 4, lines 26-31 and col. 4, lines 42-54). Similarly, in the system of Fig. 3, hosts H1-H4 hold an address of a default router and have the same shared IP address IPC as a default address (col. 6, lines 21-47).

The Examiner asserts that Wils et al. shows a “storing” step. This is a misinterpretation by the Examiner and incorrect because in Wils et al. a plurality of routers include a redundant configuration formed of a Master and a back-up and make load sharing of data transfer from a plurality of hosts. By the sharing, each router of Fig. 4 determines a non-overlapping subspace which is a Master.

Depending upon which of subspaces the host exists that subspace becomes the master of the host. The host designates an address of a router which becomes the Master to issue data. Each router relays data in which a self MAC address is indicated (see col. 7, lines 27-44). In the system of Fig. 4, hosts H1 and H2 designate their addresses using virtual router A (=router R1) as a Master to send data. Hosts H3 and H4 designate their addresses using virtual router B (=router R2) as a Master to send data. Here, the host broadcasts a source address of the host to the routers to determine the Master of the host. When one of hosts H1-H4 issues an ARP (Address Resolution Protocol) request (col. 6, line 48 – col. 7, line 44), one of routers R1 and R2 will respond to determine a router to be a Master of each host and notify the host of a MAC address. In the succeeding transfer, each host designates an address of router being a Master to transfer data.

The Examiner appears to interpret that in Wils et al. it is upon data transfer when the host broadcasts a source address of the host to the routers to determine the Master of the host. This is incorrect and a misunderstanding of Wils et al. Wils et al. discloses that each router relays data to which the address of the router is designated as explained above. Wils et al.'s router not only does not store a source address of terminal which relays a packet (as in the claims of the present invention), but also does not determine a packet to be relayed according to a source address of the terminal.

Wils et al. does not disclose or suggest storing source addresses of the terminals for relaying data in the first network in a terminal address table provided in

each apparatus, each apparatus relaying data having the source addresses stored in its associated table, as recited in the claims of the present application. Wils et al. merely discloses that each router relays data to which the address of the router is designated. The router in Wils et al. does not relay data between the terminals having source addresses stored in its associated table. Moreover, the router in Wils et al. does not store a source address of the terminal which relays a packet.

The Examiner admits that Wils et al. does not disclose or suggest load-balancing by transfer of an address to another router, but asserts that Allon et al. discloses this limitation in the abstract and col. 5, lines 22-61. However, these portions of Allon et al. merely disclose that the information stored in each computer contains a number of entries each entry containing information regarding the load on a particular one of the computers in the network, the number of links in the tree separating it from the computer in which the information is stored, and the name (i.e., rank) of the computer logically linked to the computer in which the information is stored, from which the entry was last received and the process that occurs when each computer receives the similar information from a computer. Allon et al. does not disclose or suggest notifying the selected other apparatus of the source address of the terminal deleted from the terminal address table of the one apparatus, as recited in the claims of the present application. The Examiner appears to admit this in asserting that transferring implicitly means move and delete from an overloaded node. However, Applicant submits that the cited portions of Allon et al. do not disclose or suggest either directly or implicitly notifying another apparatus of a

source address of a terminal deleted. Allon et al. merely discloses load balancing between computers configured in a tree structure where information on the loads is periodically exchanged between the computers and a load is moved according to the information. Allon et al. does not disclose or suggest anything related to having a data or packet relaying function and does not disclose that a load of the processing apparatus is transferred to another processing apparatus for each source.

The Examiner further admits that Allon et al. does not explicitly mention moving and deleting terminal addresses but asserts that Wils et al. disclosure of non-overlapping address spaces for the addresses of the nodes in the network (abstract, col. 6, line 64 – col. 7, line 7), discloses these limitations. However, Wils et al.'s disclosure of non-overlapping address spaces has nothing to do with notifying a selected other apparatus of a source address of a terminal deleted from a terminal address table, or storing the deleted source address in the terminal address table of the notified other apparatus, as recited in the claims of the present application.

Regarding claim 2, Applicant submits that this claim is dependent on independent claim 1 and, therefore, is patentable at least for the same reasons noted previously regarding this independent claim. For example, Applicant submits that none of the cited references disclose or suggest when a failure at the other apparatus is detected, judging whether the load of the one apparatus is smallest or relatively small, or if the load of the one apparatus is smallest or relatively small, inheriting an entry of the other apparatus.

Accordingly, Applicant submits that none of the cited references, taken alone or in any proper combination, disclose, suggest or render obvious the limitations in the combination of each of claims 1 and 2 of the present application. Applicant respectfully requests that these rejections be withdrawn and that these claims be allowed.

Claims 4-6 have been rejected by the Examiner for the same reasons set forth for claims 1 and 2, the Examiner asserting that they do not teach or further define over the limitations of claims 1 and 2. Applicant submits that these are improper rejections in that the Examiner is required to specifically point out in the cited references where each limitation of each claim is disclosed or suggested.

Regarding claim 4, Applicant submits that none of the cited references disclose or suggest the limitations in the combination of this claim of, inter alia, selecting another processing apparatus and a source address to be moved to said another processing apparatus such that said measured load may be changed according to the exchanged load data and notifying said selected another processing apparatus of the selected source address, or deleting said notified source address from said terminal address table of the apparatus, or if a further source address is notified from a further processing apparatus, registering the notified further source address in said terminal address table of the apparatus. As noted previously, none of the cited references disclose or suggest these limitations in the claims of the present application.

Regarding claims 5 and 6, Applicant submits that these claims are dependent on independent claim 4 and, therefore, are patentable at least for the same reasons noted previously regarding this independent claim. For example, Applicant submits that none of the cited references disclose or suggest wherein the selecting step, when the load data indicates that the load of the apparatus is larger than that of another processing apparatus, selects another apparatus having a small load, and selects a source address to be moved to the selected another processing apparatus.

Accordingly, Applicant submits that none of the cited references, taken alone or in any proper combination, disclose, suggest or render obvious the limitations in the combination of each of claims 4-6 of the present application. Applicant respectfully requests that these rejections be withdrawn and that these claims be allowed.

Claims 3 and 7 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Allon et al. in view of Wils et al. Applicant respectfully traverses these rejections.

Regarding claims 3 and 7, Applicant submits that none of the cited references, taken alone or in any proper combination, disclose, suggest or render obvious the limitations in the combination of each of these claims of, inter alia, a condition setting unit for judging on the load data recorded in the recording unit whether the load of the apparatus is largest or relatively larger, and if the load is largest or relatively large, determining an entry which is passed to the other apparatus having a smallest or relatively small load, or a terminal table managing

unit for notifying the entry determined by the condition setting unit to the other apparatus and deleting the entry from the terminal address table, or means for moving the source address held in the terminal address table to a terminal address table of another processing apparatus in accordance with the traffic amounts of the apparatus and the another processing apparatus recorded in the recording unit. The Examiner asserts that Allon et al. discloses the condition setting unit for judging from the load data recorded in claim 2. However, claim 2 of Allon et al. merely discloses that when a first computer is overloaded, a second computer that can handle the extra load is determined and at least one task is transferred to the second computer. This is not judging if a load is largest or relatively large and determining an entry which is passed to the other apparatus having a smallest or relatively small load, as recited in the claims of the present application. According to the present invention, a terminal address table records as an entry a source address of each terminal for relaying data in the network. In contrast, Allon et al. discloses transferring a task to the second computer.

The Examiner admits that Allon et al. does not disclose or suggest a terminal table but asserts that Wils et al. teaches this limitation at col. 6, line 65 – col. 7, line 7. However, as noted previously, these portions of Wils et al. do not disclose or suggest a terminal address table for recording as an entry a source address of each terminal for relaying data in the network, as recited in the claims of the present application.

The Examiner further admits that Allon et al. does not disclose moving and deleting terminal addresses but asserts that Wils et al. teaching of maintaining non-overlapping address spaces discloses these limitations. However, as noted previously, non-overlapping address spaces for the addresses of nodes in the network has nothing to do with a terminal table managing unit for notifying the entry determined by a condition setting unit to the other apparatus and deleting the entry from the terminal address table, as recited in the claims of the present application.


Accordingly, Applicant submits that none of the cited references, taken alone or in any proper combination, disclose, suggest or render obvious the limitations in the combination of claims 3 and 7 of the present application. Applicant respectfully requests that these rejections be withdrawn and that these claims be allowed.

In view of the foregoing amendments and remarks, Applicant submits that claims 1-7 are now in condition for allowance. Accordingly, early allowance of such claims is respectfully requested.

To the extent necessary, Applicant petitions for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of Mattingly, Stanger, Malur & Brundidge, P.C., Deposit Account No. 50-1417 (referencing attorney docket no. 500.39540X00).

Respectfully submitted,

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